Abstract

Objectives: Maladaptive schemas are stable cognitive working models of the world, learnt early in life, that interfere with effective functioning and underlie chronic mental illness. A major challenge for cognitive therapy has been how to modify schemas when they are so enduring and stable. We propose that because maladaptive schemas are formed through social experiences (typically abusive or neglectful ones), they might best be corrected through positive social experiences that directly challenge the schema.

Design: Two longitudinal studies were conducted, one with patients undergoing group cognitive-behavioural therapy (N=92) and one with homeless individuals residing in temporary accommodation (N=76).

Method: In each study, social isolation schema was measured at Time 1 and again at Time 2 following a group-based social experience (group psychotherapy or temporary residence at a community organisation). A positive experience of group life was operationalized as social identification with the therapy group in Study 1 or the community organisation in Study 2.

Results: In both studies, social identification led to a significant reduction in social isolation schema. Study 2 indicated that these effects were fully mediated by the formation of ties to new social groups, such that social identification scaffolded the development of new group memberships, which in turn decreased the endorsement of maladaptive schema.

Conclusions: Social identification facilitates the correction of socially-situated schema such as social isolation.

Keywords: social identity, early maladaptive schemas, cognitive theory, mental health, social isolation

Practitioner points:

- Maladaptive schemas are modifiable in short-term therapy or even in community settings.
- The experience of being accepted and belonging to a social group can challenge a person's deep-seated belief that they are socially isolated.
- Positive social experiences may act as scaffolding to help socially isolated individuals build new social group memberships.
- Less positively, social isolation schema can also act as a feedback loop, preventing people from identifying with groups, resulting in a negative social experience that may further embed the schema.
- Further research is needed to outline how clinicians might facilitate social identification.

Social isolation schema responds to positive social experience:

Longitudinal evidence from vulnerable populations

Schemas are models that individuals use to understand the world. Learnt in the earliest years of life, there is evidence that schemas are mostly beyond conscious awareness or control, but are nevertheless strongly influential over behaviour. The term schema has been used by many cognitive theorists and in the context of cognitive therapy. Beck (1967, p.283) defined schemas as "cognitive structures for screening, coding, and evaluating the stimuli that impinge upon the organism". Young and colleagues expanded the schema concept to describe a set of early maladaptive schemas that form the targets for Schema-Focused Therapy (SFT). Early maladaptive schemas are defined as "extremely stable and enduring themes, comprised of memories, bodily sensations, emotions and cognitions regarding oneself and one's relationship with others, that develop during childhood or adolescence, and are elaborated throughout one's lifetime, and that are dysfunctional to a significant degree" (Young, Klosko, & Weishaar, 2003, p7).

One ongoing challenge of psychological therapy has been to develop effective strategies to modify these schemas that are, by definition, *extremely stable and enduring*. Given that cognitive models give primacy to schemas as major contributors to the development and maintenance of chronic mental illness, it follows that effective therapeutic intervention must target (or at minimum, circumvent) these schemas in order to reduce symptoms and distress. SFT is the main therapeutic approach that targets schemas, although core-beliefs work in cognitive-behavioural therapy (CBT) has many similarities in content. In a recent systematic review of 12 studies, Masley, Gillanders, Simpson, and Taylor (2012) found that SFT reduced symptoms and improved functioning, particularly for personality disorders. For instance, Nordahl, Holthe and Haugum (2005) found that patients with both Axis I and Axis II disorders who underwent schema therapy for 18 months experienced significant improvement, and that symptom relief was predicted by the reduction in schema endorsement. Among patients with Borderline

Personality Disorder, three years of schema therapy was found to be more effective than transference-focused therapy at reducing symptomatic distress and schema endorsement (Giesen-Bloo et al., 2006; see also Sempértegui, Karreman, Arntz, & Bekker, 2013). However, this body of evidence is small and modifying schemas remains a challenging area for evidence-based psychological practice – particularly in settings where long-term therapy is not possible.

Importantly, and in line with attachment and behavioural models (Klein, Fencil-Morse, & Seligman, 1976; Waters, Hamilton, & Weinfield, 2000), cognitive models state that in most cases, schemas were likely adaptive to some degree when learned. For example, a model of the world that "others are not to be trusted, and I can only rely on myself" might be a valid way of interpreting and responding to an abusive or neglectful household as a young child. However, many years later, a mistrust schema such as this may also prevent an individual from being able to engage with appropriate support systems (e.g., friendships or community organizations) due to an ongoing lack of trust. Given that schemas are developed in response to the *real* patterns of contingency that existed in the person's past experience, we propose that they might remain responsive to patterns of contingency in current experience. That is, schemas might be best modified through experience with the social world that directly challenges the schema. If individuals are able to accumulate evidence that their schemas no longer describe their reality, might this be the best way to learn a new and more adaptive working model?

In order to explore this research question, we focused specifically on the social isolation schema, defined as "the feeling that one is isolated from the rest of the world, different from other people, and/or not part of any group or community" (Young et al., 2003, p.14). Social isolation is likely to be a difficult schema to target in traditional one-on-one therapy, as it is inherently more socially-embedded than many other schemas. This makes it ideal, however, for testing whether corrective social experiences might be beneficial. Furthermore, little evidence exists that social isolation schema can be modified through therapeutic intervention, and clinicians therefore lack evidence-based strategies for targeting this schema. Given that social

isolation has been repeatedly identified as one of the most strongly predictive schemas of mental illness symptoms (particularly depression) and poor long-term functioning (Cukor & McGinn, 2006; Eberhart, Auerbach, Bigda-Peyton, & Abela, 2011; Lumley & Harkness, 2007), it would seem to be of particular importance that research develop new strategies for challenging this schema.

Social identification

In the present research, positive experience of group life was operationalized as *social identification* with the group. Social identification refers to the sense of "we-ness", or psychological affiliation, that an individual feels for his or her community (Tajfel & Turner, 1986). Individuals who identify with a particular group (whether it is a sporting team, Canadians, or psychologists) feel that the group matters to them, and that they matter to the group. Furthermore, our social identities inform and define our self-concept (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). There is now a growing body of work showing that social identification impacts in important ways on health and wellbeing. For example, social identification has been found to be associated with reduced depression (Sani, Herrera, Wakefield, Boroch, & Gulyas, 2012), increased resilience (Jones & Jetten, 2011) and increased social support both given and received (Haslam, Reicher, & Levine, 2012; Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005).

Furthermore, a small amount of research has demonstrated the capacity of social identification to modify personality and other individual-level traits. For example, social dominance orientation among university students changes depending on whether students identify as a drama student or a business student (Jetten & Iyer, 2010). Reicher and Haslam (2006) found that identifying with a tyrannical (vs. an egalitarian) group led to an increase in right wing authoritarianism. Social identification can even modify Big-Five personality traits – for example, Reynolds and colleagues (2012) found that white Australians perceived themselves to be more neurotic when their non-Aboriginal identity was contextually salient. Conceptually, these shifts in self-perception are seen to be due to an active and comparative process, whereby

individuals' self-perception can change and is influenced by the social context (Turner, Reynolds, Haslam, & Veenstra, 2006).

It is therefore clear that identifying with a social group can change individual experience, however this has rarely been investigated in a clinical context and never applied to the study of schemas. The current project aimed to test the hypothesis that social identification with a group would predict improvement in social isolation schema. Two longitudinal studies with vulnerable populations were conducted: one with psychiatric outpatients undergoing group psychotherapy for a range of anxiety and mood disorders, and one with a homeless sample who did not receive any formal mental health intervention. Both samples were at high risk for experiencing maladaptive schema and were offered a group-based social experience (group psychotherapy or temporary residence at a community organisation).

Study 1

In the first study, we aimed to investigate whether improvements in social isolation schema in group CBT could be accounted for by social identification with the therapy group. Patients who undergo group psychotherapy typically report that group factors (e.g., cohesion, acceptance) are responsible for their symptom improvement (Hornsey, Dwyer, & Oei, 2007; Hornsey, Dwyer, Oei, & Dingle, 2009). Therefore there is reason to expect that social identification with the therapy group might facilitate change in social isolation schema, in a manner that is not specific to a particular diagnosis.

Method

Participants. Participants were 92 adult out-patients who completed group CBT for depression or anxiety (48 depression, 44 anxiety).[1] All participants received a primary diagnosis of a mood and/or anxiety disorder (according to the *Diagnostic and Statistical Manual of Mental Disorders* 4th ed.; American Psychiatric Association, 2000) based on a clinical interview with their treating psychiatrist. Patients were referred to either a depression or anxiety CBT psychotherapy group based on their primary diagnosis.

Participants were excluded on the basis of: (a) diagnosis of Mental Retardation or a Pervasive Developmental Disorder; (b) history of organically-based cognitive dysfunction; (c) acute risk of suicide; and (d) a general medical problem that would contra-indicate treatment. Patients were *not* excluded on the basis of comorbidity, and 53.7% of the sample had more than one psychiatric diagnosis. The most common diagnoses were Major Depressive Disorder and Generalised Anxiety Disorder.

The participants for the groups were private hospital patients attending the CBT unit on the referral from their Psychiatrist. Information about the study was provided in the first session and consenting patients were recruited. Non-consenting patients attended the groups but did not complete any questionnaires for the research study. Patients paid for their treatment typically with help from their private hospital insurance schemes.

25 males and 67 females participated, with a mean age of 44.75 (range 18-70; *SD*=12.86). Participants were relatively well-educated (which may be related to their capacity to pay for private treatment services as well as the geographical proximity of a large university), with 48.9% holding a university qualification.

Procedure. Group therapy was conducted as 2 x 3.5-hour groups per week for four weeks with six to 12 patients (the high intensity was due to the hospital setting). The program followed an established treatment manual (see Oei, 2011 for details). Both depression and anxiety groups consisted of interventions focused on learning new cognitive and behavioral skills and involved active participation. Schemas were *not* explicitly targeted. Participants completed questionnaires at Time 1 (T1; on day one) and Time 2 (T2; four weeks later following completion of day eight).

Materials. At both time points, measures included symptom checklists and a measure of schemas. T1 additionally included demographic questions and T2 included a social identification measure to assess affiliation with the therapy group.

Symptom checklists. Depression symptoms were measured using the Zung Self-Rating Depression Scale, which provides a validated indicator of the current behavioural, cognitive, somatic and affective symptoms of depression (Gabrys & Peters, 1985; Zung, Richards, & Short, 1965). Patients responded to 20 items such as "I feel down-hearted and blue" on a four-point scale from "A little of the time" to "All of the time," yielding a scale with scores ranging from 20 to 80 points (α = .90 at T1). A higher score is indicative of a more severe level of depression.

Anxiety symptoms were measured using the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988), which is a validated measure of the severity of clinical anxiety symptoms. Patients rate how bothered they have been by 21 symptoms such as "Heart pounding/racing" in the past month on a four-point scale from "Not at all" to "Severely." Items are summed to obtain a total score ranging from 0 to 63 (α = .93 at T1). A higher score is indicative of a more severe anxiety.

Schemas. Schemas were calculated using the Young Schema Questionnaire – Short Form (Schmidt, Joiner, Young, & Telch, 1995; Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002), which includes 75 items with 5 items assessing each of 15 schemas. Social isolation schema, which was of primary interest to our research hypotheses, was measured using questions such as " I feel on the outside of groups" rated on a 6-point scale from "Completely untrue of me" to "Describes me perfectly." Consistent with clinical recommendations (e.g., Young, Klosko, & Weishaar, 2003), the scale was scored such that responses of 5 or 6 on the 6-point scale were allocated 1 point, while scores of 4 or below were allocated 0 points. The sum of these points across the five items for each schema yielded a 0-5 scale, where scores 2 or above are considered clinically meaningful.[2]

Social identification. Social identification with the therapy group was measured at the completion of therapy using 11 items adapted from standard scales (α = .87), for example, "I am glad that I belong to this group" and "I feel strong ties to this group" measured on a seven-point scale from "Not at all" to "Very much" (Hinkle, Taylor, Fox-Cardamone, & Crook, 1989; Leach

et al., 2008; Luhtanen & Crocker, 1992). Adaptation was necessary as several standard items were judged to be not appropriate as a measure of therapy group identification, for example "It is pleasant to be a member of this group".

Results

Descriptive statistics for the sample are outlined in Table 1. As expected, participants reported elevated levels of depression and anxiety symptoms at baseline. T1 depression symptoms were comparable to clinical norms (Thurber, Snow, & Honts, 2002); similarly T1 anxiety symptoms were comparable to clinical norms (Beck, 1991), in the sample as a whole. In order to evaluate how participants improved over time and whether there were any differences according to primary diagnosis, a repeated-measures analysis of variance was conducted that included depression and anxiety symptoms as within-subjects variables with two-levels (T1 and T2) and group-type as the between-subjects predictor. Within-subjects contrasts indicated that there was significant improvement in depression, F (1, 90) = 40.58 , p < .01, and anxiety, F (1, 90) = 6.65, p < .05, across the course of therapy. Group type did not predict symptom severity (ps > .26) and did not interact significantly with time for either variable (ps > .29). This suggests that severity of depression and anxiety were comparable across the depression and anxiety treatment groups, and improvement occurred to the same degree in both types of group. This was presumably because of the high numbers of patients with comorbid depression/anxiety, as well as the high levels of psychological distress in the sample overall.

Social isolation schema was elevated at baseline, with 45% of the sample reporting levels of the schema that are considered "clinically meaningful" (Young et al., 2003). Social isolation schema had dropped significantly at T2, t(91)=2.91, p<.01; d = .25, such that only 30% of the sample remained in the "clinically meaningful" range. Therapy group identification was high in the sample overall, with only 12% of the sample falling below the mid-point of the scale.

Evaluation of the hypothesis. Multi-level modelling was initially considered most appropriate for these analyses, as patients participated in 27 unique therapy groups. However, the

variance component model calculated using STATA version 12.1 indicated that therapy group did not account for any variance in social isolation schema at Time 2 (intra-class correlation <.001), and the key results did not differ in the multi-level linear regression (where participants were nested within therapy groups) compared to a simple linear regression. Therefore, the simpler linear regression approach was retained and is reported here.

Consistent with the hypothesis, social identification with therapy group predicted improvements in social isolation schema (in a regression model controlling for initial levels of schema, $t(91)=-2.03$, $p<.05$; $\eta^{2=}$-.16), see Figure 1 and Table 2. In a further analysis we added group type (depression vs. anxiety) to the regression model, as well as its interaction with social identification. Both group-type and the group-type x social identification interaction were non-significant ($p>.10$), and social identification remained a significant predictor of social isolation schema change ($p<.05$). This suggests that the relationship between social identification and social isolation schema was *not* specific to either the depression or anxiety groups.

We then conducted sensitivity analyses in order to rule out an alternative explanation for these results – that social identification was a non-selective correlate of schema change more generally. To determine which schemas declined significantly from T1 to T2, a repeated-measures ANOVA was conducted with all 15 schema domains entered as within-subjects variables with two levels (T1 and T2). These analyses found that of the 15 schemas that were measured, only four declined significantly between T1 and T2 (social isolation, abandonment, vulnerability to harm and illness and unrelenting standards). Of these, only social isolation was significantly associated with social identification at T2 (Pearson's $r = -.29$; vulnerability to harm and illness was marginally significant at $r = -.19$, $p = .08$). Consistent with our theoretical analysis, social identification was found to act specifically on social isolation schema.

Discussion

The results of Study 1 confirmed the hypothesis: social identification with the therapy group was associated with a reduction in social isolation schema. This suggests that schemas *can*

change in short-term therapy, and that the positive experience of the therapy group may be particularly important in facilitating this change. Shared experiences of depression and anxiety are likely to have provided the basis for this sense of shared identity, which might subsequently have normalised and validated these strong emotions. For those patients who did strongly identify with the therapy group, they had an intensive experience of belonging (8 days over 4 weeks) that appears to have challenged their cognitive working model of feeling "on the outside" of groups.

Although these results are promising, there are also several limitations of this study. Firstly, the sample was undergoing a therapeutic intervention and experienced overall improvement in their symptomatology and social isolation schema. Although short-term CBT does not explicitly target schemas, and although we attempted to statistically account for symptom improvement, other unmeasured factors that improved between T1 and T2 (e.g., negative cognitions) could plausibly account for the effects. Therefore, it is important to test this model in a vulnerable sample who are *not* receiving a structured mental health intervention and investigate whether this model can account for schema change in a population who do not experience systematic change in other factors likely to impact on social isolation schema.

A second limitation of the current study is that the positive social experience that participants had was with a therapy group, which is temporary by nature. Although participants strongly identified with the therapy group, they were imminently going to lose this identity at Time 2 as therapy ceased. Although this makes Study 1 a conservative test of the hypothesis, it also makes it unclear what longer-term impact this might have on social isolation schema. The loss of the therapy group could potentially be seen as a further betrayal or abandonment by others, and lead to an imminent increase in social isolation schema. Alternatively, identification could act as *scaffolding* to build new groups and make new social connections. Previous research found that, in a disadvantaged sample, individuals facilitated to join a choir reported that this acted as a stepping stone to joining other groups and increasing social connectedness more generally (Dingle, Brander, Ballantyne, & Baker, 2013). Joining new groups has been found to be

beneficial for mental health (Cruwys et al., 2013; Haslam et al., 2008), in part because this is a necessary prerequisite for investing psychologically (identifying) with new groups. We posit that social identification with one group might scaffold the formation of new group memberships in two ways – either by fostering a new willingness to join social groups, or through specific relationships formed within one group facilitating the formation of ties to new groups. In Study 2, we test this scaffolding hypothesis in a structural equations model to investigate whether social identification reduces social isolation schema by facilitating socially isolated individuals to form new social group memberships.

Study 2

The aim of Study 2 was to investigate whether social identification would lead to the reduction of social isolation schema *via* its role in scaffolding the formation of new group memberships among a vulnerable population. Therefore, in addition to measuring social identification (in this case with a community service organisation), we also measured whether individuals with high levels of social identification experienced a subsequent increase in the extent and diversity of their social group memberships. Specifically, Study 2 tested a model whereby social identification at Time 1 predicted a subsequent increase in the number of group memberships at Time 2, which in turn was associated with a reduction in social isolation schema at Time 2. This was tested using a structural equations model that could control for initial social isolation as well as the number of group memberships prior to Time 1.

Method

Participants. Participants were 76 homeless individuals who were interviewed at Time 1 (T1) while residing in a specialist homelessness service funded by a charitable organization (The Salvation Army) and who could be located 3 months later (or 2 weeks after leaving the service) for the Time 2 follow-up survey (T2).[3]

Thirty-one males and 45 females participated, with an average age of 34.26 years (range 19-56; *SD* = 9.05). The sample was substantially more disadvantaged than in Study 1, with 53.9%

of respondents having less than high school education and only 19.7% in paid employment of any kind. At T1, participants had been in the specialist homelessness service for a range of time from half a week (4 days) to 35 weeks.

At T2, 44% were in a stable or supported accommodation, 43% were unstable (rough sleeping, or temporary accommodation) and 12% were still residing in the original accommodation service.

Procedure. Participants were recruited from five different residential homeless services, ranging from dormitory style rooms, single rooms, units within group residential facility and one service offering individual housing in the community. Some services provide minimal programs and formal opportunities for engaging in-group activities, while others had a stronger community focus, and engaged in weekly group workshops and programs. Individuals who had inadequate access to safe and secure housing were eligible for assistance of the specialist homelessness service, and maximum length of stay is three months (which can be extended at the discretion of the service manager).

All residents of the services during the study period were eligible for participation. The research study was explained to residents in group meetings (in terms of the purpose and aims of the study, participation requirements and compensation, issues of confidentiality). Residents were then invited to participate, and individual interviews were scheduled for interested individuals. In addition, service managers and service workers passed on any details of people who indicated they interest in participating (who had heard through word of mouth of other participants or staff).

At T1, the questionnaire was conducted in a private room in the service. If the participants had low literacy, the questionnaire was conducted verbally, with scales for visual aid. Participants completed the T2 questionnaire at a location convenient for them, following the same procedures from T1. At both time-points participants were compensated $20 for their time.

Materials. The short form of the Young Schema Questionnaire-2 was used, with scoring conducted in the same manner as Study 1. An abridged four-item scale was used to measure social identification (Doosje, Ellemers, & Spears, 1995), for example "I feel strong ties with members of (this service)" measured on a seven-point scale from "Do not agree at all" to "Agree completely" (α = .87). A further improvement on the design of Study 2 was that it was possible to include our main measure of social identification at T1 as participants were already residing in the service (whereas in Study 1 participants were unfamiliar with the therapy group at T1), and this introduced a time-delay between the measurement of social identification and the dependent measure of social isolation schema.

At T1, two items were used to measure the extent to which participants were members of multiple social groups, and had contacts in different groups that they could draw support from. These were "Before coming to (this service), I was a member of lots of different social groups" and "Before coming to (this service), I had friends who are in lots of different groups" (α = .85). At T2, four similar items were used to assess whether participants had joined new group memberships since leaving the homelessness service, for example "Since leaving (the service) I have become friends with people in one or more new groups." Responses were on a seven-point scale from "Strongly disagree" to "Strongly agree" (α = .87). All multiple group membership items were adapted from the Exeter Identity Transition Scale (EXITS; Jetten, Haslam, & Haslam, 2012).

Results

Descriptive statistics for the sample are outlined in Table 2. Social isolation schema was high at baseline, with 28% of participants clinically elevated on this measure, although not as high as among the clinical sample in Study 1. There was no change in the mean level of social isolation in the sample at T2. However, the Pearson's correlation between social isolation schema at T1 and social isolation schema at T2 was only r=.33, which indicates that there was only moderate

consistency in this schema over the study period and many individuals experienced a substantial increase or decrease in their schema.

Social identification with the service was moderate in the sample overall (M=4.37, SD=1.68), with substantial polarisation in participants' experience of the service: 23.7% of the sample scored three or below on the seven-point scale and 40.8% of the sample scored five or above.

Multiple group memberships were somewhat low and variable (comparable to stroke patients, Haslam et al., 2008, and brain injury patients; Jones et al., 2012) when measured both as the number of group prior to accessing the service (T1; M=3.61, SD=2.02) or since accessing the service (T2; M=3.50, SD=1.82). This is consistent with evidence that homeless individuals typically lack social support (Hawkins & Abrams, 2007).

In order to test our hypothesis that social identification would reduce social isolation schema via its role in scaffolding new group memberships, a structural equations model was used to test whether there was an indirect path from social identification to social isolation schema at T2 *via* the development of multiple group memberships. In addition, the model controlled for social isolation schema at T1 and multiple group memberships at T1.

The final model can be seen in Figure 2. 5000 bootstrap trials were used which corrected somewhat for the limited sample size (Nevitt & Hancock, 2001; Fritz & MacKinnon, 2007), and the final model had excellent fit, $\chi^2(4)=2.26$, *ns*., GFI=.99, NFI=.94, CFI=.99. The original model tested also included a direct path from social identification to social isolation schema at T2, however this path was not significant and model fit was improved without it; hence it was not included in the final model. The fact that this path was not needed indicates that the effect of social identification on social isolation schema is fully accounted for by its role in scaffolding individuals to join new groups.

Other effects apparent from the final model include the significant direct paths between multiple group memberships at T1 and T2, and between social isolation schema at T1 and T2.

This represents the relative stability of both constructs. Unsurprisingly, multiple group membership at T1 is also correlated with social isolation schema at T1, although not strongly, suggesting that individuals who perceive themselves as social isolated also report fewer group memberships (a more concrete measure of their social networks). Finally, social isolation schema at T1 predicts lower social identification with the homelessness service, an important and theoretically consistent finding that will be discussed further in the General Discussion.

Discussion

The hypothesis of Study 2 was confirmed – social identification acted indirectly to reduce social isolation schema by supporting the formation of social ties to new groups. Even in this extremely disadvantaged sample who were not receiving clinical intervention, the more individuals identified with the community of the homeless service where they were residing, the more this experience acted as a scaffold that helped them to develop new social connections over time and reduce their deeply-held belief that they were socially isolated. At the same time, the opposite was also true – the more individuals had a negative social experience in the homelessness service, the less likely they were to become social engaged with new groups and this was associated with remaining isolated over time.

Study 2 did have several limitations – its small sample size, variable length of contact with the homelessness service and retrospective measurement of multiple group memberships at T1 are all important to note. However, a strength is that it this is one of only a small number of longitudinal quantitative studies that has been carried out with an ecologically-valid homeless sample (Anderson, 2003).

General Discussion

The studies presented here provide evidence that social identification with either a therapy group (Study 1) or a community service (Study 2) can reduce the extent to which vulnerable people feel socially isolated and unable to connect with others. This occurred both within the context of group psychotherapy and also among a population receiving no formal

mental health intervention. Therefore, although schemas may be relatively stable and resistant to change, they *are* modifiable, even among members of disadvantaged groups. These findings are fully consistent with theoretical work within the schema literature (e.g. Cukor & McGinn, 2006; Wang, Halvorsen, Eisemann, & Waterloo, 2010, but are novel in suggesting how schema change might occur over a short time period outside of structured therapeutic interventions. Some positive experiences, such as belonging to a social group, may be sufficiently powerful to initiate schema modification. These results suggest that social interventions beyond the therapy context, such as those carried out by social workers and community health workers, may have a role to play in reducing maladaptive schema.

An important finding of Study 2 was evidence that social isolation schema acts as a barrier to individuals being able to identify with new groups. This creates a feedback loop whereby the more severe a person's social isolation schema, the less likely he or she is to engage effectively with new opportunities for positive social interaction, further embedding social isolation schema in the future. This feedback loop provides direct evidence for why schemas might be so stable and persist for so long after they become maladaptive in an individual's life. This supports the theoretical model of schemas as deeply embedded and difficult to change. However, it also speaks to the role of the therapist in facilitating such change. Unlike in Study 2, participants in Study 1 did experience an overall reduction in schema at Time 2 and also had very high levels of social identification with the therapy group. Perhaps one "non-specific factor" in group therapy might be the therapist's capacity to facilitate social identification and therefore enable this powerful mechanism of schema change in patients.

These studies also provide evidence that beliefs about and perceptions of the social world, such as social isolation schema, are socially-situated. That is, they reflect and create social realities and so potentially respond to changes in the social environment. We believe that attending to the socially-embedded aspects of schemas may be a significant boon to therapeutic intervention for several reasons. First, such an approach may be less stigmatising to patients.

Individuals who have experienced abusive environments typically manifest maladaptive schema and associated mental illness. To conceptualise and communicate the aetiology of this pathology not at the level of the person (e.g., personality disorder) but in terms of social and environmental factors, is less damning to the patient as well as more consistent with the established evidence-base. Second, attending to the social and environmental factors involved in shaping and maintaining maladaptive schemas may suggest new and fruitful avenues for intervention. For instance, strategies might be developed to assist health practitioners to facilitate social identification with groups. Previous research, particularly within organisational psychology, has successfully boosted social identification through techniques to enhance the extent to which groups are perceived as positive, distinctive and enduring (Ashforth, Kreiner, & Kreiner, 1999; Haslam, Eggins, & Reynolds, 2003). Further research in this area might enrich clinical models of how individuals perceive and interpret their social world.

This research demonstrates the importance of social identification and the facilitation of new social group memberships in reducing social isolation schema. However, much research remains to be done to determine what an evidence-based social intervention for maladaptive schemas might look like. In particular, research that explicates how social identification with therapy groups or support services might be enhanced, and that trials such interventions experimentally, will bring the potential practical benefits of these findings to fruition. Future research might also investigate how it is that social identification provides a gateway to the development of new group memberships: two potential mechanisms are through the practical facilitation of new social bonds (i.e., meeting people who can introduce you to new people and new groups) and through the reduction of personal barriers to seeking new affiliations (e.g., increased trust or reduced social anxiety).

Overall, the current investigation has demonstrated that schemas, although relatively stable over time, are not set in stone. Furthermore, schemas are likely to be modified by social experiences that directly challenge their content. In the case of social isolation schema, this

means that the experience of valuing and being valued by a group assists people to reach out to new groups, and ultimately reduces the degree to which they perceive themselves to be socially isolated. A significant strength of the studies presented here is that they investigate maladaptive schemas longitudinally in two vulnerable populations, where such schemas are likely to be most prevalent and problematic. This makes the findings particularly relevant for clinicians and community mental health workers, who work with such populations and are in a position to facilitate positive social interactions and enhance social identification with therapy groups or community services. Most importantly, the current investigation suggests that positive social experiences might be therapeutic in their capacity to modify individuals' deep-seated and maladaptive beliefs that they are alone in the world.

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Table 1.

Descriptive statistics for Study 1 at T1 (commencement of group CBT) and T2 (conclusion of group CBT)

Variable	*M*	*SD*
Social isolation schema (T1)	1.57	1.88
Social isolation schema (T2)	1.11	1.76
Depression severity (T1)	50.90	11.65
Depression severity (T2)	45.38	11.38
Anxiety severity (T1)	19.33	12.61
Anxiety severity (T2)	16.83	12.61
Social identification (T2)	5.23	1.04

Table 2.

Descriptive statistics for Study 2 at T1 (while residing at homelessness service) at T2 (three months later).

Variable	*M*	*SD*
Social isolation schema (T1)	1.07	1.64
Social isolation schema (T2)	1.07	1.72
Number of group memberships before accessing service (T1)	3.61	2.02
Number of group memberships since accessing service (T2)	3.50	1.82
Social identification (T1)	4.37	1.68

Table 3.
Regression equations to predict Time 2 social isolation schema in Study 1.

	b	SE	Significance level	Semi-partial r^2
Model 1				
Social isolation schema (T1)	.58	.08	< .001	.36*
Social identification (T2)	-.28	.14	.04	.03*
Model 2				
Social isolation schema (T1)	-.58	.08	<.001	.35*
Social identification (T2)	.32	.15	.04	.03*
Group type (primary diagnosis)	-.12	.30	.69	.00
Group type x Social identification	.18	.15	.23	.01

Notes.
N = 92
*p < .05

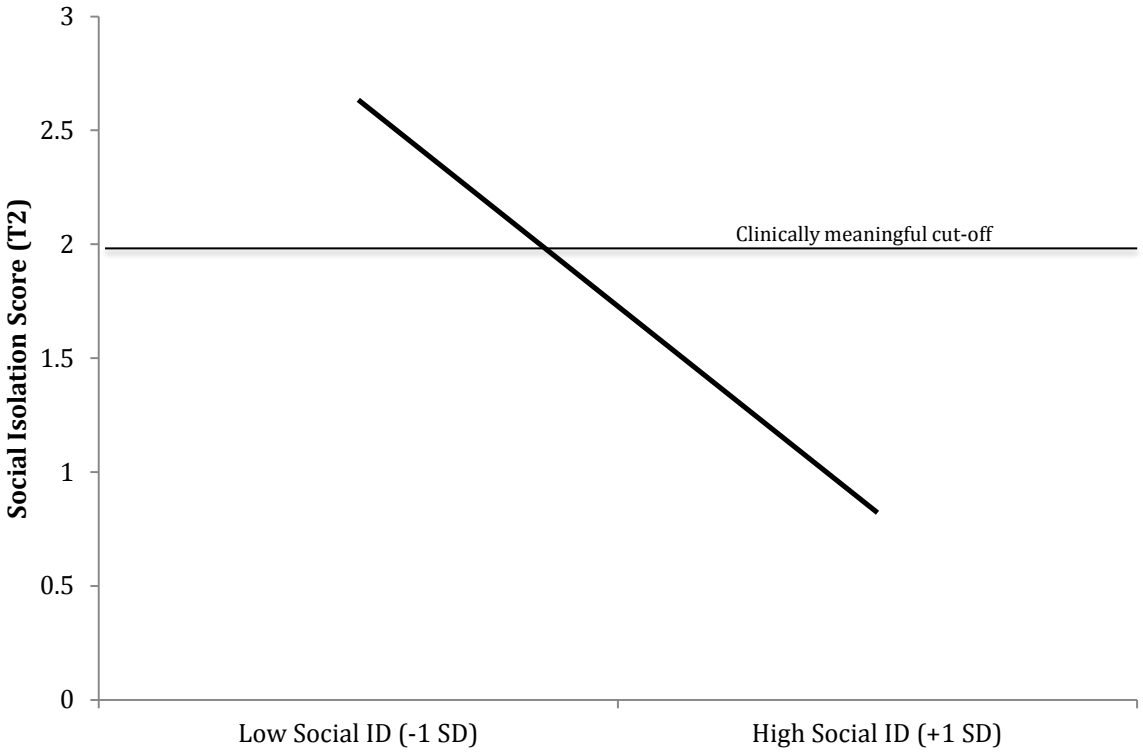

Figure 1. Social identification with therapy group predicts significantly lower social isolation schema at the conclusion of therapy (controlling for initial levels of the schema). Study 1; N = 92.

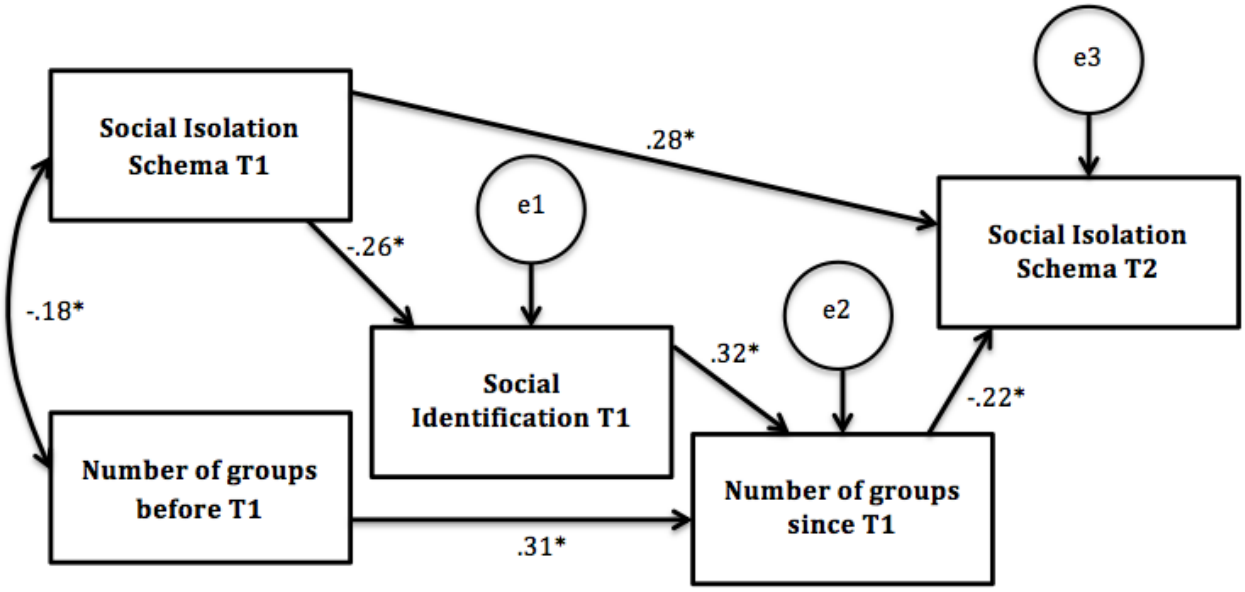

Figure 2. Final model demonstrating that social identification acts via multiple group memberships to reduce social isolation schema over time among homeless persons (Study 2; N = 76). Squared multiple correlation for social isolation schema at T2 = .161.

Footnotes

[1] 156 participants commenced participation at Time 1 of Study 1, and 92 completed the program and the Time 2 questionnaire. This represents a 59% retention rate. No baseline differences were found on any demographic variables, schema endorsement, or symptom severity between those who discontinued participation and those who completed the study.

[2] Some previous research has also scored the items of the YSQ in a continuous manner to yield a more sensitive final scale (e.g., Eberhart et al., 2011; Shah & Waller, 2000). We repeated our key analyses with the items of the social isolation schema scored continuously, and replicated the results (in fact, the effect sizes were larger in many cases).

[3] 119 participants completed Time 1 of Study 2, and 76 were traceable and consented to participate at follow-up. This represents a 64% retention rate (particularly high, given the extreme disadvantage and unstable residence experienced by the sample). No baseline differences on demographic variables were found between those who were retained versus those who dropped out. Perhaps unsurprisingly, however, those high in social isolation schema were marginally more likely ($p = .06$) to be lost to follow-up.